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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/803,585

03/17/2004

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EXAMINER

KANG, INSUN

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/803,585	Applicant(s) DAYNES ET AL.	
	Examiner INSUN KANG	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/26/2006, 8/3/2004, and 3/17/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/26/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responding to application papers filed on 6/26/2006, 8/3/2004, and 3/17/2004.
2. Claims 1-26 are pending in the application.

Specification

3. The information of the related application, 10/803,205, is missing in page 1. The application has been patented with the patent number, 7406687. The status of the application needs to be updated in page 1.

Claim Objections

4. Claims 2, 10, and 18 are objected to because of the following informalities: per claim 2, ‘.’ is missing in the claim. Per claims 10 and 18, these claims are object based on the dependency on claim 2. Appropriate correction is required.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1, 2, and 25 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 17, and 18 of U.S. Patent No. 7406687 ('687). Although the conflicting claims are not identical, they are not patentably distinct from each other because:

An example is given below:

Per claim 1:

Patent '687 claims: a method for reducing a usage of main memory by a first class loader and a second class loader, the first class loader and the second class loader being capable of dynamically loading a class having a class file, the first class loader being capable of translating the class file into a first class type and the second class loader being capable of translating the class file into a second class type, the method comprising: dividing a runtime representation of the first class type into a first loader independent part and a first loader dependent part ; determining whether a runtime representation of the second class type can use the first loader independent part of the runtime representation of the first class type; and if the first loader independent part of the runtime representation of the first class type can be used by the runtime representation of the second class type, generating a second loader dependent part of the runtime representation of the second class type using the first loader independent part of the runtime representation of the first class type (see claim 1 of '687).

The instant claim does not explicitly recite the step of performing a loader re-entrant...being executed, as recited in patent '687 claim 1. It would have been obvious

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for one of ordinary skill in the art of program development at the time the instant invention was made to modify the '687 method by omitting the step of performing a loader re-entrant...being executed recited in '687 claim 1 for the purpose of expediting the method.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 19-24 and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 19-24 and 26 are non-statutory because they are directed to a merely abstract idea, which does not result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 USC § 101. In determining whether the claim is for a practical application, the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather that the final result is useful, tangible, and concrete. The result(s) of the determination steps of three conditions are not for example, stored, displayed, or conveyed in any manner causing any useful functional or structural change in a computer system so as to achieve a practical application. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35 U.S.C. §101. The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35

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U.S.C. §101.

<http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf>

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-14 and 18-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Czajkowski et al. (cited art, “Code Sharing among Virtual machines,” 2002).

Per claim 1:

Czajkowski discloses:

A method for reducing a usage of main memory by a first class loader and a second class loader, the first class loader and the second class loader being capable of dynamically loading a class having a class file, the first class loader being capable of translating the class file into a first class type and the second class loader being capable of translating the class file into a second class type, the method comprising: (i.e. page 6, 3rd paragraph)

- dividing a runtime representation of the first class type into a first loader

independent part and a first loader dependent part (i.e. page 12, 2nd paragraph, 4th paragraph)

- determining whether a runtime representation of the second class type can use the first loader independent part of the runtime representation of the first class type (i.e. page 3,

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3rd paragraph); and if the first loader independent part of the runtime representation of the first class type can be used by the runtime representation of the second class type, generating a second loader dependent part of the runtime representation of the second class type using the first loader independent part of the runtime representation of the first class type (i.e. page 3, 3rd paragraph).

Per claim 2:

Czajkowski discloses:

-generating from the second class file a second loader dependent part of the runtime representation of the second class type and a second loader independent part (i.e. page 4, 2nd paragraph).

Per claim 3:

Czajkowski discloses:

determining a satisfaction of a first condition, the first condition being defined by a first class file being the same as a second class file used by the second class loader to define the second class type (i.e. page 14, 2nd paragraph);

- determining the satisfaction of a second condition, the second condition being defined by a loader independent part of the runtime representation of a super class type of the second class type being the same as a loader independent part of a runtime representation of a super class type of the first class type (i.e. page 10, 3rd paragraph)

-determining the satisfaction of a third condition, the third condition being defined by the second class type having the same unimplemented methods as the first class type,

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wherein determining the first condition, the second condition, and the third condition enables the runtime representation of the second class type to use the first loader independent part of the runtime representation of the first class type (i.e. page 14, second paragraph, page 10, 3rd paragraph).

Per claim 4:

Czajkowski discloses:

the class file encodes an architecturally neutral binary representation of the class (i.e. page 2, 1st paragraph).

Per claim 5:

Czajkowski discloses:

- the first class file being the same as the second class file used by the second class loader to define the second class type includes, identifying that each byte of the second class file is the same as a corresponding byte of the first class file (i.e. page 3 3rd paragraph).

Per claim 6:

Czajkowski discloses:

- the loader independent part of the runtime representation of the super class type of the second class type being the same as the loader independent part of the runtime representation of the super class type of the first class type includes, identifying a reference to the loader independent part of the super class type of the second class type being the same as a reference to the loader independent part of runtime representation of the super class type of the first class type (i.e. page 7, 2nd paragraph, page 3, 3rd

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paragraph).

Per claim 7:

Czajkowski discloses:

- the reference to the loader independent part of the runtime representation of the super class type of the first class type is stored in the loader dependent part of the runtime representation of the super class type of the first class type, and the reference to the loader independent part of the runtime representation of the second class type is stored in the loader dependent part of the runtime representation of the super class type of the second class type (i.e. page 4, 2nd paragraph).

Per claim 8:

Czajkowski discloses:

- a loader independent part of the runtime representation of the class type includes bytecodes of all the methods of the class (i.e. page 5, 4th paragraph).

Per claim 9:

Czajkowski discloses:

- the second class type having the same unimplemented methods as the first class type includes, determining whether the second class type declares an interface; if the second class type does not declare the interface, an unimplemented method defined by the second class type is the same as an unimplemented method declared by the first class type (i.e. page 7, 2nd paragraph); and if the second class type declares the interface, if the method declared in the interface has the same name and the same signature in the first class type and the second class type, determining one of the first class type and the

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second class type including a definition of the method, and the first class file and the second class file not including the definition of the method (i.e. page 7, 2nd paragraph, page 14, 2nd paragraph); and if the method declared in the interface does not have the same name and the same signature in the first class type and the second class type, identifying the method of the interface declared in the second class type having a definition in the second class type and the first class type (i.e. page 9, fourth paragraph, 7th paragraph).

Per claim 10:

Czajkowski discloses:

-obtaining a template of a first loader dependent runtime representation from the first loader independent part of the runtime representation of the first class type (i.e. page 6, 2nd paragraph); replicating the template of the first loader dependent runtime representation to produce the second loader dependent runtime representation (i.e. page 6, 3rd paragraph, 4th paragraph) resetting a value of the second loader dependent runtime representation to an initial state (i.e. page 6, 4th paragraph); and setting a reference to the second loader independent part of the runtime representation in the second loader dependent runtime representation (i.e. page 6, 4th paragraph).

Per claim 11:

Czajkowski discloses:

- an instance of the first class type includes a reference to the first loader dependent part of the runtime representation of the first class type (i.e. page 6 4th paragraph).

Per claim 12:

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Czajkowski discloses:

a reference to the first loader independent part of the runtime representation of the first class type; a reference to the first loader dependent part of a representation of a super class type of the first class type; a first loader dependent part table including information computed from symbolic links; and an array of references to a first loader dependent part runtime representation of methods (i.e. page 4, 2nd paragraph).

Per claim 13:

Czajkowski discloses:

a reference to a constant pool cache; and a reference to a sharable runtime representation of the method (i.e. page 6, 2nd paragraph).

Per claim 14:

Czajkowski discloses:

-the third condition is satisfied if the first condition and the second condition have been satisfied and the first class type does not declare an interface (i.e. page 7, 2nd paragraph).

Per claim 18:

Czajkowski discloses:

- the first loader independent part of the runtime representation of the first class type includes a pointer to the first loader dependent part of the runtime representation of the first class type that is the template (i.e. page 12, 6th paragraph).

Per claim 19:

Czajkowski discloses:

A method for using a first loader independent part of a runtime representation of a

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software component defined by a first component loader as a second loader independent part of a runtime representation of the software component defined by a second component loader, the method comprising (i.e. page 14, 2nd paragraph)

-determining a satisfaction of a first condition, the first condition being defined by a first binary representation of the first software component being the same as a second binary representation of the second software component used by the second component loader to define a second software component type (i.e. page 14, 2nd paragraph)

-determining the satisfaction of a second condition, the second condition being defined by a second loader independent part of a runtime representation of a super software component type of the second software component type being the same as a loader independent part of a runtime representation of a super software component type of the first software component type (i.e. page 10, 3rd paragraph; page 14, 2nd paragraph)

-determining the satisfaction of a third condition, the third condition being defined by the second software component type having the same unimplemented methods as the first software component type (i.e. page 14, paragraph 2, page 10, 3rd paragraph).

Per claim 20:

Czajkowski discloses:

-identifying that each byte of the second binary representation of the software component is the same as a corresponding byte of the first binary representation of the software component (i.e. page 3, 3rd paragraph).

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Per claim 21:

Czajkowski discloses:

the loader independent part of the runtime representation of the super software component type of the second software component type being the same as the loader independent part of the runtime representation of the super software component type of the first software component type includes, identifying a reference to the loader independent part of the runtime representation of the super software component type being the same as a reference to the loader independent part of the runtime representation of the super class type of the first software component type (i.e. page 7, 2nd paragraph, page 3, 3rd paragraph).

Per claim 22:

Czajkowski discloses:

the reference to the loader independent part of the runtime representation of the super software component type of the first software component type is stored in the loader independent part of the runtime representation of the first software component type and the reference to the loader independent part of the runtime representation of the super software component type of the second software component type is stored in the loader independent part of the runtime representation of the software component type of the second software component type (i.e. page 4, 2nd paragraph).

Per claim 23:

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Czajkowski discloses:

- a component loader independent part of the runtime representation of a software component type includes a bytecode of a method (i.e. page 5, 4th paragraph).

Per claim 24 , this claim is another version of the claimed method discussed in claim 9, wherein all claim limitations also have been addressed and/or covered in cited areas as set forth the above.

Per claim 25, it is the computer program version of claim 1, respectively, and is rejected for the same reasons set forth in connection with the rejection of claim 1 above.

Per claim 26, it is the computer program version of claim 19, respectively, and is rejected for the same reasons set forth in connection with the rejection of claim 19 above.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Czajkowski et al. (cited art, "Code Sharing among Virtual machines," 2002) in view of Skibbie et al. (US 6,910,128) hereafter Skibbie.

Per claim 15:

Czajkowski does not explicitly teach computing a Secure Hash Algorithm-1 ("SHA-1") digest for the first class file and the second class file; and comparing the SHA-1 digest of

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the first class file with the SHA-1 digest of the second class file, wherein the first class file is the same as the second class file if the SHA-1 digest of the first class file and the SHA-1 digest of the second class file have equivalent values. However, Sikbbie teaches using such a SHA-1 digest for security was known in the pertinent art, at the time applicant's invention was made, to find different messages outputting the same message digest (i.e. Fig. 7 and the associated description). It would have been obvious for one having ordinary skill in the art to modify Czajkowski's disclosed system to incorporate the teachings of Sikbbie. The modification would be obvious because one having ordinary skill in the art would be motivated to achieve a condensed format of the class files in Czajkowski.

Per claim 16:

Czajkowski in view of Skibbie further discloses: the SHA-1 digest of the first class file of the first class type is stored in a table configured to map the first class name of the first class type to a record including the SHA-1 digest of the first class file and a reference to the first loader independent part of the runtime representation of the first class type (i.e. page 4, 2nd paragraph).

Per claim 17:

Czajkowski further discloses: the first loader independent part of the runtime representation of the first class type includes a pointer to the loader independent part of the runtime representation of the super class type of the first class type (i.e. page 12, 5th paragraph, 6th paragraph).

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to INSUN KANG whose telephone number is (571)272-3724. The examiner can normally be reached on M-R 7:30-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis A. Bullock, Jr. can be reached on 571-272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Insun Kang/

Examiner, Art Unit 2193